B. Amendment to the Claims

Please amend claims 1, 25 and 27 as follows.

1. (Currently Amended) An apparatus in which a pollutant introduced to a case is decomposed by being irradiated with light, comprising:

means for obtaining a processed gas by mixing a halogenated aliphatic hydrocarbon and gaseous chlorine;

the case for receiving the processed gas ~~pollutant, which is a halogenated aliphatic hydrocarbon~~;

a light source positioned inside the case; and

a light reflector positioned outside the case,

wherein the light reflector reflects the light, which is emitted from the light source, into the case to irradiate the processed gas ~~pollutant and chlorine, which are~~ introduced into the case, and

wherein a wavelength of the light from the light source ~~reflected into the case~~ is from 300 nm to 500 nm.

2. (Cancelled)

3. (Previously Presented) The apparatus according to claim 1, wherein the case is cylindrical and the light source is rod-shaped and is placed at the cylindrically central axis of the case.

4-5. (Cancelled)

6. (Previously Presented) The apparatus according to claim 1, further comprising:

an air supplier;

a functional-water supplier; and

an aeration means, in order to bring air into contact with functional water.

7. (Previously Presented) The apparatus according to claim 6, wherein the air contains the pollutant.

8. (Original) The apparatus according to claim 6, wherein the aeration means comprises an air diffuser.

9. (Previously Presented) The apparatus according to claim 6, wherein the functional water supplier supplies the functional water, which comprises a hypochlorite ion.

10. (Previously Presented) The apparatus according to claim 6, wherein the functional water supplier supplies the functional water, which is an acidic water formed in the vicinity of an anode by electrolysis of water containing an electrolyte.

11. (Previously Presented) The apparatus according to claim 6, wherein the functional water is a mixture of an acidic water and an alkaline water, wherein the acidic water and the alkaline water are formed in a vicinity of an anode and in a vicinity of a cathode, respectively, by electrolysis of water containing an electrolyte.

12. (Original) The apparatus according to claim 11, wherein the acidic water is contained in the functional water in a volume equal to or more than that of the alkaline water.

13. (Original) The apparatus according to claim 10, wherein the electrolyte is at least one of sodium chloride and potassium chloride.

14. (Original) The apparatus according to claim 9, wherein the functional water is an aqueous solution of a hypochlorite.

15. (Original) The apparatus according to claim 14, wherein the hypochlorite is at least one of sodium hypochlorite and potassium hypochlorite.

16. (Original) The apparatus according to claim 14, wherein the functional water further comprises at least one of an inorganic acid and an organic acid.

17. (Original) The apparatus according to claim 16, wherein the

functional water comprises one selected from the group consisting of hydrochloric acid, hydrofluoric acid, sulfuric acid, a phosphoric acid, a boric acid, acetic acid, formic acid, malic acid, citric acid, oxalic acid and combinations thereof.

18. (Previously Presented) The apparatus according to claim 6, wherein the functional water has a pH of 1 to 4, an oxidation-reduction potential of 800 to 1500 mV, and a chlorine concentration of 5 to 150 mg/l, where the oxidation-reduction potential is determined by using a platinum electrode as a working electrode and a silver-silver chloride electrode as a reference electrode.

19. (Previously Presented) The apparatus according to claim 6, wherein the functional water has a pH of 4 to 10, an oxidation-reduction potential of 300 to 1100 mV, and a chlorine concentration of 2 to 100 mg/l, where the oxidation-reduction potential is determined by using a platinum electrode as a working electrode and a silver-silver chloride electrode as a reference electrode.

20. (Cancelled)

21. (Previously Presented) The apparatus according to claim 1, wherein the light comprises light in the range of wavelengths of 350 to 450 nm.

22. (Previously Presented) The apparatus according to claim 1, wherein the irradiance of the light is 10 mW/cm^2 to 10 mW/cm^2.

23. (Previously Presented) The apparatus according to claim 22, wherein the irradiance of the light is 50 mW/cm^2 to 5 mW/cm^2.

24. (Cancelled)

25. (Currently Amended) The apparatus according to claim 1 ~~[[24]]~~ [[24]], wherein the halogenated aliphatic hydrocarbon is a chlorinated aliphatic hydrocarbon.

26. (Original) The apparatus according to claim 25, wherein the chlorinated aliphatic hydrocarbon is selected from the group consisting of chloroethylene, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, trichloroethylene, tetrachloroethylene, chloromethane, dichloromethane, trichloromethane, 1,1,1-trichloroethane and combinations thereof.

27. (Currently Amended) An apparatus in which a pollutant is decomposed by being irradiated with light, comprising:

means for obtaining a processed gas by mixing a halogenated aliphatic hydrocarbon and gaseous chlorine;

a first case for receiving the processed gas ~~pollutant, which is a halogenated aliphatic hydrocarbon~~;

a second case having a light reflector; and

a light source,

wherein the first case and the light source are inside the second case, and

wherein the light reflector reflects the light, which is emitted from the light source, into the first case to irradiate the processed gas ~~pollutant and chlorine, which~~ introduced into the first case, and

wherein a wavelength of the light from the light source ~~reflected into the first case~~ is from 300 nm to 500 nm.

28. (Withdrawn) A method of decomposing a pollutant, the method comprising the steps of:

housing a subject to be treated in a case having a light-reflecting surface;

irradiating the subject with light; and

thereby decomposing a pollutant in the subject.

29. (Withdrawn) The method according to claim 28, wherein the subject to be treated comprises the pollutant and chlorine.

30. (Withdrawn) The method according to claim 28, wherein:

the case is cylindrical;

the light-reflecting surface is formed on the inner surface of the case; and

the light is applied from a rod-shaped light source placed at the cylindrically central axis of the case.

31. (Withdrawn) The method according to claim 30, wherein:

the case is formed from a material being optically opaque to visible light;

and

the light-reflecting surface is formed by mirror finishing the inner surface of the case.

32. (Withdrawn) The method according to claim 30, wherein:

the case is formed from a material optically transparent to visible light, and

the light-reflecting surface is composed of a reflective film formed on the outer surface of the case.

33. (Withdrawn) The method according to claim 29, wherein the chlorine is obtained by bringing air into contact with the functional water.

34. (Withdrawn) The method according to claim 29, wherein the subject to be treated is obtained by bringing air containing the pollutant into contact with the functional water.

35. (Withdrawn) The method according to claim 33, wherein the air is brought into contact with the functional water by using an air diffuser.

36. (Withdrawn) The method according to claim 29, wherein the functional water comprises a hypochlorite ion.

37. (Withdrawn) The method according to claim 29, wherein an acidic

water is used as the functional water, and wherein the acidic water is formed in the vicinity of an anode by electrolysis of water containing an electrolyte.

38. (Withdrawn) The method according to claim 29, wherein a mixture of an acidic water and an alkaline water is used as the functional water, and wherein the acidic water and the alkaline water are formed in the vicinity of an anode and in the vicinity of a cathode, respectively, by electrolysis of water containing an electrolyte.

39. (Withdrawn) The method according to claim 38, wherein the acidic water is contained in the mixture in a volume equal to or more than that of the alkaline water.

40. (Withdrawn) The method according to claim 37, wherein at least one of sodium chloride and potassium chloride is used as the electrolyte.

41. (Withdrawn) The method according to claim 36, wherein an aqueous solution of a hypochlorite is used as the functional water.

42. (Withdrawn) The method according to claim 41, wherein at least one of sodium hypochlorite and potassium hypochlorite is used as the hypochlorite.

43. (Withdrawn) The method according to claim 41, wherein the

functional water further comprises at least one of an inorganic acid and an organic acid.

44. (Withdrawn) The method according to claim 43, wherein the functional water comprises one selected from the group consisting of hydrochloric acid, hydrofluoric acid, sulfuric acid, a phosphoric acid, a boric acid, acetic acid, formic acid, malic acid, citric acid, oxalic acid and combinations thereof.

45. (Withdrawn) The method according to claim 29, wherein the functional water has a hydrogen ion concentration (pH) of from 1 to 4, an oxidation-reduction potential of from 800 to 1500 mV, and a chlorine concentration of from 5 to 150 mg/l, where the oxidation-reduction potential is determined using a platinum electrode as a working electrode and a silver-silver chloride electrode as a reference electrode.

46. (Withdrawn) The method according to claim 29, wherein the functional water has a hydrogen ion concentration (pH) of from 4 to 10, an oxidation-reduction potential of from 300 to 1100 mV, and a chlorine concentration of from 2 to 100 mg/l, where the oxidation-reduction potential is determined using a platinum electrode as a working electrode and a silver-silver chloride electrode as a reference electrode.

47. (Withdrawn) The method according to claim 28, wherein the light comprises light in the range of wavelengths of from 300 to 500 nm.

48. (Withdrawn) The method according to claim 47, wherein the light

comprises light in the range of wavelengths of from 350 to 450 nm.

49. (Withdrawn) The method according to claim 28, wherein the light is applied at an irradiance of from 10 mW/cm^2 to 10 mW/cm^2.

50. (Withdrawn) The method according to claim 49, wherein the light is applied at an irradiance of from 50 mW/cm^2 to 5 mW/cm^2.

51. (Withdrawn) The method according to claim 28, wherein the pollutant comprises a halogenated aliphatic hydrocarbon.

52. (Withdrawn) The method according to claim 51, wherein the halogenated aliphatic hydrocarbon is a chlorinated aliphatic hydrocarbon.

53. (Withdrawn) The method according to claim 52, wherein the chlorinated aliphatic hydrocarbon is selected from the group consisting of chloroethylene, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, trichloroethylene, tetrachloroethylene, chloromethane, dichloromethane, trichloromethane, 1,1,1-trichloroethane and combinations thereof.

54. (Withdrawn) A method of decomposing a pollutant, the method comprising the steps of:

housing a subject to be treated in a first case;

irradiating the subject with light by a light irradiation means; and

thereby decomposing a pollutant in the subject,

wherein a second case is used, the second case housing the first case and the light irradiation means and having a light-reflecting surface.

55. (Cancelled)

56. (Withdrawn) A method of decomposing a pollutant, the method comprising the steps of:

irradiating a subject to be treated with light, the subject comprising chlorine and the pollutant;

reflecting light passing through the subject; and

irradiating the subject with the reflected light reflected in the reflecting step.

57. (Previously Presented) The apparatus according to claim 1, further comprising a vessel connected to the case, which said vessel holds functional water.

58. (Previously Presented) The apparatus according to claim 27, wherein the light reflector has an elliptic shape, and the light source and the first case are each positioned on axis of the elliptically-shaped light reflector.

59. (Previously Presented) The apparatus of claim 27, further comprising a vessel connected to the first case, which said vessel holds functional water.